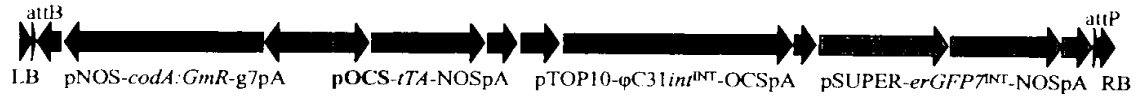


FIGURE 1

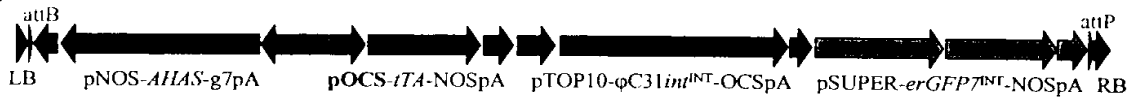
A) pBPS EW051 T-DNA



B) pBPS EW151 T-DNA



C) Monocot T-DNA



D) T-DNA Foot Print



1 kb

FIGURE 2

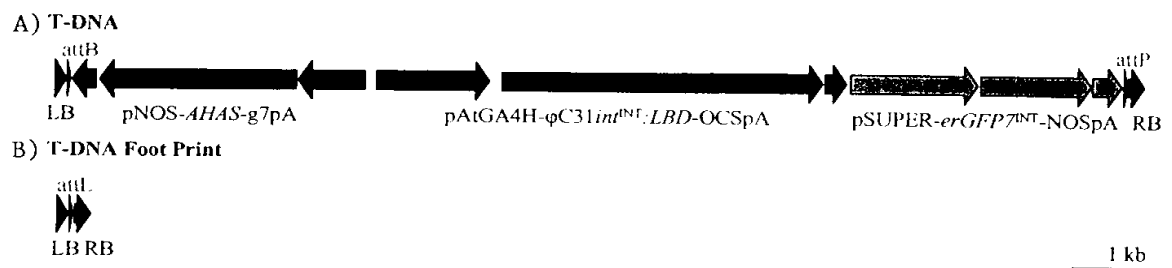


FIGURE 3

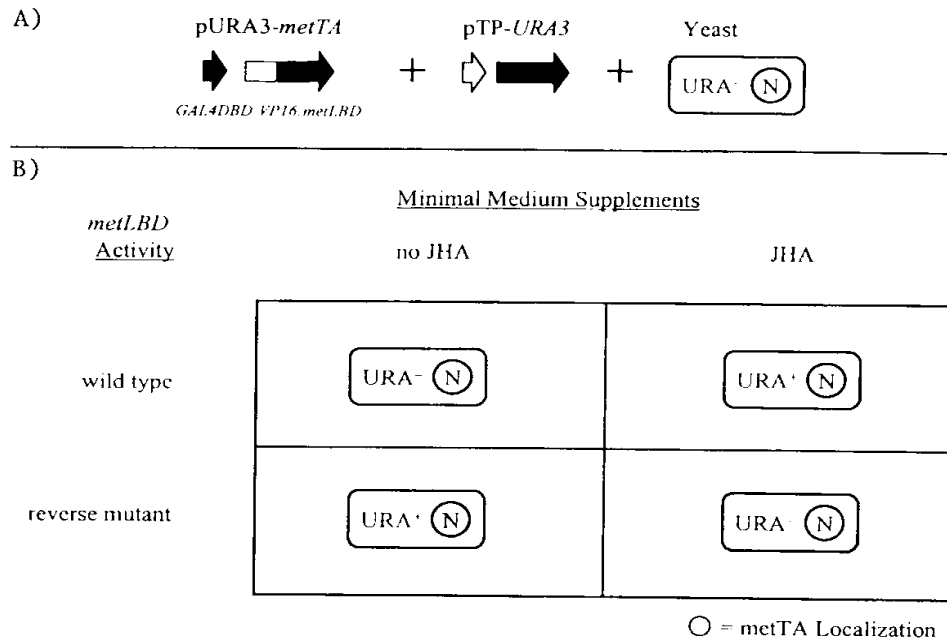


FIGURE 4

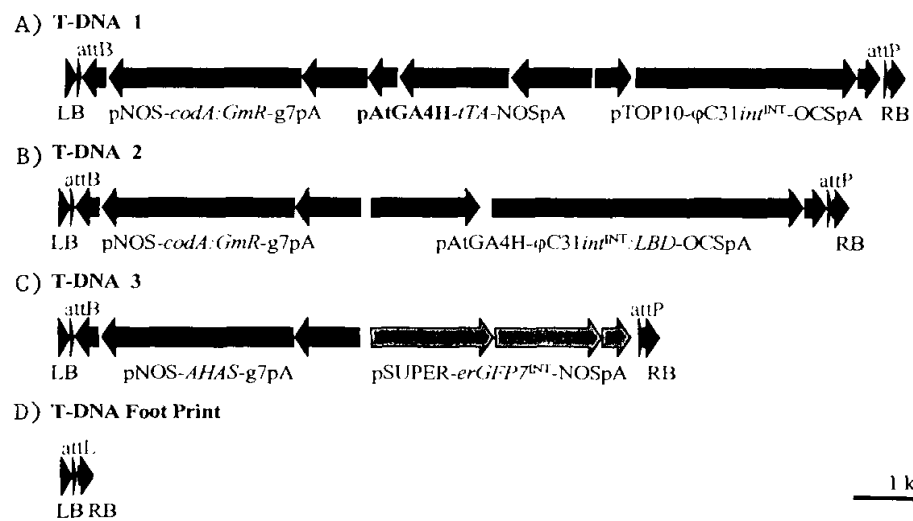


FIGURE 5

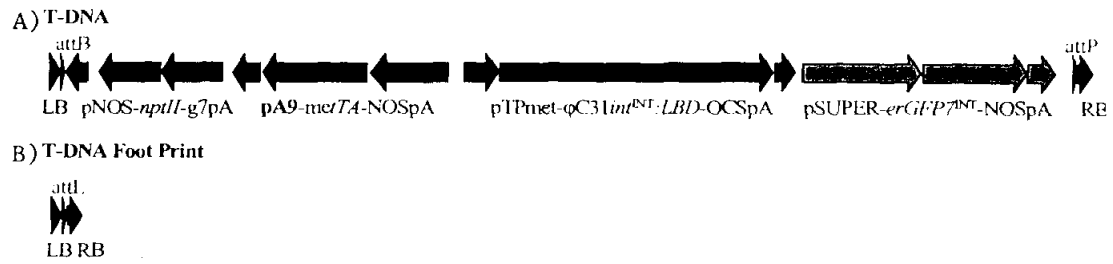


FIGURE 6

Nucleotide sequence of ϕ C31 int^{INT}

1 ATGGCACAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
61 TATATAATAA TTATCATTAA TTAGTAGTAA TATAATAITT CAAATATTTT TTTCAAAATA
121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGTAGTTTAT AAGTGTGTAT ATTTTAATTT
181 ATAACTTTTC TAATATATGA CCAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
241 CGTCAGTCGC GCGAGCGCGA GAATTCGAGC GCAGCAAGCC CAGCGACACA GCGTAGCGCC
301 AACGAAGACA AGGCGGCCGA CTTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTTCAGG
361 TTCGTCGGGC ATTTTCAGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCC
421 GAGTTCGAAC GCATCCTGAA CGAATGCCG GCCGGGCGGC TCAACATGAT CATTGTCTAT
481 GACGTGTCGC GCTTCTCGCG CCTGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTTCCGGCA GGGAAACGTC
601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGC
721 AAGGCGCCTT ACGGCTTCGA GCTTGTTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
781 ATGGTCAATG TCGTCATCAA CAAGCTTGCG CACTCGACCA CTCCCCTTAC CGGACCCCTC
841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
961 CGCATGGACG CTGACGCCGT GCCGACCCGG GCGGAGACGA TTGGGAAGAA GACCGCTTCA
1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCCGCGTAT TGCGGGCTTC
1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
1141 TACCGCATTC AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
1201 ATCGAGCCCG CTGAGTGGTA TGAGCTTCAG GCGTGTTGG ACGGCAGGGG GCGCGGCAAG
1261 GGGCTTTCCC GGGGGCAAGC CATTCTGTCC GCCATGGACA AGCTGTACTG CGAGTGTGGC
1321 GCCGTCATGA CTTCGAAGCG CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTCGC
1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
1441 GCGGCACTCG ACAAGTTCGT TCGGGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCCGAC GCTTCGGCAA GCTCACTGAG
1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGCGCGT ACGACGGACC CGTTGGCAGG
1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGCTCCGGC AGCAAGGGGC GGAAGAGCGG
1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGCTTCCCC TTGACCAATG GTTCCCCGAA
1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GCGCGCGCTC AGTAGACGAC
1861 AAGCGCGTGT TCGTCGGGCT CTTCGTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 7

Nucleotide sequence of ϕ C31_{int}*^{INT}

1 ATGGCACAAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
61 TATATAATAA TTATCATTAA TTAGTAGTAA TATAATATTT CAAATATTTT TTTCAAATA
121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGTAGTTTAT AAGTGTGTAT ATTTTAATTT
181 ATAACTTTTT TAATATATGA CCAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
241 CGTCAGTCGC GCGAGCGCGA GAATAGCAGT GCAGCAAGCC CAGCGACACA GCGTAGCGCC
301 AACGAAGACA AGGCGGCCGA CCTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTTCAGG
361 TTCGTGCGGC ATTTTCAGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCC
421 GAGTTCGAAC GCATCCTGAA CGAATGCCGC GCCGGGCGGC TCAACATGAT CATTGTCTAT
481 GACGTGTCGC GCTTCTCGCG CCTGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTTCGGCA GGGAAACGTC
601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGG
721 AAGGCGCCTT ACGGCTTCGA GCTTGTTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
781 ATGGTCAATG TCGTCATCAA CAAGTAGCG CACTCGACCA CTCCCCTTAC CGGACCCTTC
841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
961 CGCATGGACG CTGACGCCGT GCCGACCCGG GCGGAGACGA TTGGGAAGAA GACCGCTTCA
1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCCGCGTAT TGCGGGCTTC
1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
1141 TACCGCATTG AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
1201 ATCGAGCCCC CTGAGTGGTA TGAGCTTCAG GCGTGGTTGG ACGGCAGGGG GCGCGGCAAG
1261 GGGCTTTCCC GGGGGCAAGC CATTCTGTCC GCCATGGACA AGCTGTACTG CGAGTGTGGC
1321 GCCGTCATGA CTTCGAAGCG CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTCGC
1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
1441 GCGGCACTCG ACAAGTTCGT TCGGGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCCGAC GCTTCGGCAA GCTCACTGAG
1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGAGCTT ACGACGGACC CGTTGGCAGG
1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGCTCCGGC AGCAAGGGGC GGAAGAGCGG
1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGTTGCCCC TTGACCAATG GTTCCCCGAA
1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GGCGCGCGTC AGTAGACGAC
1861 AAGCGCGTGT TCGTCGGGCT CTTGCTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 8

Nucleotide sequence of pBPS EW051 T-DNA Region

Sequence Molecule Features:

Start	End	Name
3	217	Left T-DNA Border
225	259	attB
485	273	g7pA (terminator)
2288	519	<i>codA-aacCI</i> translational fusion gene
2898	2303	Nopaline Synthase Promoter
2925	3236	Octopine Synthase Promoter
3260	4267	tTA gene
4292	4558	Nopaline Synthase Terminator
4597	4933	Top10 promoter
4977	7007	ϕ C31 <i>int</i> ^{INT} gene
7027	7221	Octopine Synthase Terminator
7253	8392	Super Promoter
8413	9405	<i>erGFP7</i> ^{INT} gene
9411	9677	Nopaline Synthase Terminator
9690	9728	attP
9735	9880	Right T-DNA Border

Sequence:

```

1  TGGTGATTTT GTGCCGAGCT GCCGGTCGGG GAGCTGTTGG CTGGCTGGTG GCAGGATATA
61  TTGTGGTGTA AACAAATTGA CGCTTAGACA ACTTAATAAC ACATTGCCGA CGTCTTTAAT
121 GTACTGAATT AACATCCGTT TGATACTTGT CTAAAATTGG CTGATTTCTGA GTGCATCTAT
181 GCATAAAAAC AATCTAATGA CAATTATTAC CAAGCAGGAT CACCGGTGCC AGGGCGTGCC
241 CTTGGGCTCC CCGGGCGCGG CCCGGGCAAT TCCCATCTTG AAAGAAATAT AGTTTAAATA
301 TTTATTGATA AAATAAGTCA GGTATTATAG TCCAAGCAAA AACATAATTT ATTGATGCAA
361 AGTTTAAATT CAGAAATATT TCAATAACTG ATTATATCAG CTGGTACATT GCCGTAGATG
421 AAAGACTGAG TGCGATATTA TGTGTAATAC ATAAATTGAT GATATAGCTA GCTTAGCTCA
481 TCGGGGGATC CTTAATCGAC TCTAGCTAGA ACGAATTGTT AGGTGGCGGT ACTTGGGTCG
541 ATATCAAAGT GCATCACTTC TTCCCGTAGT CCCAACTTTG TATAGAGAGC CACTGCGGGA
601 TCGTCACCGT AATCTGCTTG CACGTAGAT ACATAAGCAC CAAGCGCGTT GGCCTCATGC
661 TTGAGGAGAT TGATGAGCGC GGTGGCAATG CCCTGCCTCC GGTGCTCGCC GGAGACTGCG
721 AGATCATAGA TATAGATCTC ACTACGCGGC TGCTCAAACC TGGGCAGAAC GTAAGCCGCG
781 AGAGCGCCAA CAACCGCTTC TTGGTCGAAG GCAGCAAGCG CGATGAATGT CTTACTACGG
841 AGCAAGTTCC CGAGGTAATC GGAGTCCGGC TGATGTTGGG AGTAGGTGGC TACGTCTCCG
901 AACTCACGAC CGAAAAGATC AAGAGCAGCC CGCATGGATT TGAATTGGTC AGGGCCGAGC
961 CTACATGTGC GAATGATGCC CATCCTCGAG AAACGTTTGT AATCGATGGC TTCTGGCTGC
1021 TCCAGATATA CGGTGGTTTG TGCCGGTTGT GTGCTGGCAA TCACCTTGCC GCCACGTACC
1081 GAATAACGTA CCGGAACCTG ACGGCGCAGC CATCAAACC CATTTCAGC CGGCAGGATA
1141 ATCAGGTTGG CGCTGTTTCC GGCGGCAATG CCGTAATCCT GCAAATTCAA CGTCCTTGCG
1201 CTGTGGTGGG TGATTAAATT CAGGCCATCG TTAATCTGCC CGTAGCCCAT CAACTGGCAA
1261 ACATGCAGCC CCATATGCAG CACTTGCAGC ATATTCGCCG TTCCAGCGG ATACCACGGA
1321 TCGAAGACAT CATCGTGACC AAAGCAGACG TTAATGCCCG ACTCCAGCAT CTCTTTAAGC
1381 CGCGTGATGC CGCGACGTTT TGGATACGTA TCGAAACGTC CTGTCAGATG AATATTGACC
1441 AGCGGGTTGG CGACAAAGTT AATACCGGAC ATTTTCAGCA AGCGGAACAG GCGTGAGGTA
1501 TACGCCCCGT TATAGGAGTG CATTGCCGTG GTGTGGCTGG CGGTGACTGC CGCGCCCATG
1561 CCTTCATGGT GCGCCAGGGC AGCAACGGT TCACAAAGC GCGACTGCTC GTCATCGATC
1621 TCATCACAGT GAACGTCGAT GAGACGGTCG TATTTTTCG CAGGGGCGAA GGTTTTATGC
1681 AGCGACTCCA CGCCGTATTC ACGGGTAAAT TCAAAATGCG GAATCGCCCC CACTACATCT
1741 GCCCCTAAGC GTAACGCCTC TTCCAGCAAC GCTTCACCGT TGGGATACGA CAAAATCCCT
1801 TCCTGAGGGA AGGCGACGAT TTGCAGATCA ATCCACGGCG CGACTTCCTG CTTCACTTCC
1861 AGCATTGCTT TCAGCGCAGT TAGCGTTGCA TCCGAAACAT CGACATGGGT ACGCACATGC
1921 TGAATGCCGT TGGCAATCTG CCATTCAGC GTTTGCCATG CGCGTTGTTT CACATCGTCA

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FIGURE 8 CONTINUED

1981 TGGGTAAATA ACGCTTTGCG CTCGGCCCCAG CGTTCAATGC CTTCAAACAG CGTGCCGGAC
 2041 TGATTCCAGT TCGGTTGTCC GCGGTTTTC GTGGTGTCCA GGTGAATATG TGGCTCCACA
 2101 AACGGCGGTA TAACTAAACC TTGTTCCGCA TCCAGGCTGT TTTCAAGTTAT GGGCATCACG
 2161 CCGGATTGCG CATCAATGGC GCTGATTTTT CCGTCTGCA GATGAATCTG CCACAGCCCC
 2221 TCTTCGCCTG GTAACCGGGC GTTAATAATT GTTTGTAAAG CGTTATTCTGA CACTGTTAGC
 2281 CTCCCCATGG AGATCTGGAT TGAGAGTGAA TATGAGACTC TAATTGGATA CCGAGGGGAA
 2341 TTTATGGAAG TCAGTGGAGC ATTTTGTACA AGAAATATTT GCTAGCTGAT AGTGACCTTA
 2401 GCGGACTTTT GAACGCGCAA TAATGGTTTC TGACGTATGT GCTTAGCTCA TTAAACTCCA
 2461 GAAACCCGCG GCTGAGTGGC TCCTTCAACG TTGCGGTTCT GTCAGTTCCA AACGTAAAC
 2521 GGCTTGTCCC GCGTCATCGG CCGGGGTCAT AACGTGACTC CCTTAATTCT CCGCTCATGA
 2581 TCTTGATCCC CTGCGCCATC AGATCCTTGG CGGCAAGAAA GCCATCCAGT TTACTTTGCA
 2641 GGGCTTCCCA ACCTTACCAG AGGGCGCCCC AGCTGGCAAT TCCGGTTTCGCT TTGCTGTCCA
 2701 TAAACCGCC CAGTCTAGCT ATCGCCATGT AAGCCCACTG CAAGCTACCT GCTTTCTCTT
 2761 TCGCTTTCG TTTTCCCTTG TCCAGATAGC CCAGTAGCTG ACATTCATCC GGGGTACGA
 2821 CGCTTTCTG GAGCTGGCTT TCTACGTGTT CCGCTTCTT TAGCAGCCCT TGCCTCTGA
 2881 GTGCTTTCG CAGCGTGAAG CTGCGCGCGC CAAGCTTGCA TGCCCGCTCT TAGCCGTACA
 2941 ATATTACTCA CCGGTGCGAT GCGCCCCATC GTAGGTGAAG GTGGAAATTA ATGATCCATC
 3001 TTGAGACCAC AGGCCACAA CAGCTACCAG TTTCTCAAG GGTCCACCAA AAACGTAAGC
 3061 GCTTACGTAC ATGGTCGATA AGAAAAGGCA ATTTGTAGAT GTTAACATCC AACGTGCTT
 3121 TCAGGGATCC TTTTACCGA CAACTCATCC ACATTGATGG TAGGCAGAAA GTTAAAGGAT
 3181 TATCGCAAGT CAATACTTGC CCATTCATTG ATCTATTTAA AGGTGTGGCC TCAAGGAGAT
 3241 CCGCGGGCCG GCAATTCATA TGTCTAGATT AGATAAAAGT AAAGTGATTA ACAGCGCAT
 3301 AGAGCTGCTT AATGAGGTCG GAATCGAAGG TTTAAACAAC CGTAAACTCG CCCAGAAGT
 3361 AGGTGTAGAG CAGCTACAT TGTATTGGCA TGTAAAAAAT AAGCGGGCTT TGCTCGACGC
 3421 CTTAGCCATT GAGATGTTAG ATAGGCACCA TACTCACTTT TGCCCTTTAG AAGGGGAAAG
 3481 CTGGCAAGAT TTTTACGTA ATAACGCTAA AAGTTTTAGA TGTGCTTTAC TAAGTCATCG
 3541 CGATGGAGCA AAAGTACATT TAGGTACACG GCCTACAGAA AAACAGTATG AAACCTCTCGA
 3601 AAATCAATTA GCCTTTTTAT GCCAACAAGG TTTTCTACTA GAGAATGCAT TATATGCACT
 3661 CAGCGCTGTG GGGCATTTTA CTTTAGGTTG CGTATTGGAA GATCAAGAGC ATCAAGTCGC
 3721 TAAAGAAAGAA AGGGAAACAC CTACTACTGA TAGTATGCCG CCATTATTAC GACAAGCTAT
 3781 CGAATTATTT GATCACCAAG GTGCAGAGCC AGCCTTCTTA TTCGGCCTTG AATTGATCAT
 3841 ATGCGGATTA GAAAAACAAC TTAATGTGA AAGTGGGTCC GCGTACAGCC GCGCGCGTAC
 3901 GAAAAACAAT TACGGGTCTA CCATCGAGGG CCTGCTCGAT CTCCCGGACG ACGACGCCCC
 3961 CGAAGAGGCG GGGCTGGCGG CTCCGCGCCT GTCCTTTCTC CCCGCGGGAC ACACGCGCAG
 4021 ACTGTCGACG GCGCCCCCGA CCGATGTCAG CCTGGGGGAC GAGCTCCACT TAGACGGCGA
 4081 GGACGTGGCG ATGGCGCATG CCGACGCGCT AGACGATTTT GATCTGGACA TGTTGGGGGA
 4141 CCGGGATTCC CCGGTCCGG GATTTACCCC CCACGACTCC GCCCCCTACG GCGCTCTGGA
 4201 TATGGCCGAC TTCGAGTTTG AGCAGATGTT TACCGATGCC CTTGGAATTG ACGAGTACGG
 4261 TGGGTAGGGG GCGCGAGGAT CTCGAGCAGC TCGAATTTCC CCGATCGTTT AACATTTTGG
 4321 CAATAAAGTT TCTTAAGATT GAATCCTGTT GCCGGTCTTG CGATGATTAT CATATAATTT
 4381 CTGTTGAATT ACGTTAAGCA TGTAATAATT AACATGTAAT GCATGACGTT ATTTATGAGA
 4441 TGGGTTTTTA TGATTAGAGT CCCGCAATTA TACATTTAAT ACGCGATAGA AAACAAAATA
 4501 TAGCGCGCAA ACTAGGATAA ATTATCGCGC GCGGTGTCAT CTATGTTACT AGATCGGGAA
 4561 TTCCTTAATT AAGAATTCGA GCTCGGTACC GAGCTCGACT TTCCTTTTC TCTATCACTG
 4621 ATAGGGAGTG GTAAACTCGA CTTTCATTTT CTCTATCACT GATAGGGAGT GGTAAACTCG
 4681 ACTTTCACTT TTCTCTATCA CTGATAGGGA GTGGTAAACT CGACTTTTAC TTTTCTCTAT
 4741 CACGGATAGG GAGTGGTAAA CTCGACTTTC ACTTTTCTCT ATCACTGATA GGGAGTGGTA
 4801 AACTCGACTT TCACTTTTCT CTATCACTGA TAGGGAGTGG TAAACTCGAC TTTCACTTTT
 4861 CTCTATCACT GATAGGGAGT GGTAAACTCG AGATAGAGTG ATCTAGTCTT CGCAAGACCC
 4921 TTTACGTATA TAAGGCCTTT CTAGACATTT GCTCGAGCCC GGGGATCCAT ATGGCCATGG
 4981 CACAAGGGGT TGTGACCGGG GTGGATACGT AAGTTTCTGC TTCTACCTTT GATATATATA
 5041 TAATAATTAT CATTAATTAG TAGTAATATA ATATTTCAAA TATTTTTTTC AAAATAAAAG
 5101 AATGTAGTAT ATAGCAATTG CTTTTCTGTA GTTTATAAGT GTGTATATTT TAATTTATAA
 5161 CTTTTCTAAT ATATGACCAA AATTTGTTGA TGTGCAGGTA CGCGGGTGCT TACGACCGTC

FIGURE 8 CONTINUED

5221 AGTCGCGCGA GCGCGAGAAT TCGAGCGCAG CAAGCCCAGC GACACAGCGT AGCGCCAACG
 5281 AAGACAAGGC GGCCGACCTT CAGCGCGAAG TCGAGCGCGA CGGGGGCCCG TTCAGGTTCCG
 5341 TCGGGCATT T CAGCGAAGCG CCGGGCACGT CGGCGTTCGG GACGGCGGAG CGCCCGGAGT
 5401 TCGAACGCAT CCTGAACGAA TGCCGCGCCG GCGGGCTCAA CATGATCATT GTCTATGACG
 5461 TGTCGCGCTT CTCGCGCCTG AAGGTCATGG ACGCGATTCC GATTGTCTCG GAATTGCTCG
 5521 CCCTGGGCGT GACGATTGTT TCCACTCAGG AAGGCGTCTT CCGGCAGGGA AACGTCATGG
 5581 ACCTGATTCA CCTGATTATG CGGCTCGACG CGTCGCACAA AGAATCTTCG CTGAAGTCGG
 5641 CGAAGATTCT CGACACGAAG AACCTTCAGC GCGAATTGGG CGGGTACGTC GGCGGGAAGG
 5701 CGCCTTACGG CTTTCGAGCTT GTTTCGGAGA CGAAGGAGAT CACGCGCAAC GGCCGAATGG
 5761 TCAATGTCGT CATCAACAAG CTTGCGCACT CGACCACTCC CTTACCAGGA CCCTTCGAGT
 5821 TCGAGCCCGA CGTAATCCGG TGGTGGTGGC GTGAGATCAA GACGCACAAA CACCTTCCCT
 5881 TCAAGCCGGG CAGTCAAGCC GCCATTACCC CGGGCAGCAT CACGGGGCTT TGTAAGCGCA
 5941 TGGACGCTGA CGCCGTGCCG ACCCGGGGCG AGACGATTGG GAAGAAGACC GCTTCAAGCG
 6001 CCTGGGACCC GGCAACCGTT ATGCGAATCC TTCGGGACCC GCGTATTGCG GGCTTCGCCG
 6061 CTGAGGTGAT CTACAAGAAG AAGCCGACG CGACGCCGAC CACGAAGATT GAGGGTTACC
 6121 GCATTACGCG CGACCCGATC ACGTCCGGC CGGTCGAGCT TGATTGCGGA CCGATCATCG
 6181 AGCCCGCTGA GTGGTATGAG CTTACGGCGT GGTGGACGG CAGGGGGCGC GGCAAGGGCG
 6241 TTTCCCGGGG GCAAGCCATT CTGTCCGCCA TGGACAAGCT GTACTGCGAG TGTGGCGCCG
 6301 TCATGACTTC GAAGCGCGGG GAAGAATCGA TCAAGGACTC TTACCGCTGC CGTCGCCGGA
 6361 AGGTGGTCTGA CCCGTCCGCA CCTGGGCGAG ACGAAGGCAC GTGCAACGTC AGCATGGCGG
 6421 CACTCGACAA GTTCGTTGCG GAACGCATCT TCAACAAGAT CAGGCACGCC GAAGGCGACG
 6481 AAGAGACGTT GGCGCTTCTG TGGGAAGCCG CCCGACGCTT CGGCAAGCTC ACTGAGGCGC
 6541 CTGAGAAGAG CGGCGAACGG GCGAACCTTG TTGCGGAGCG CGCCGACGCC CTGAACGCCC
 6601 TTGAAGAGCT GTACGAAGAC CGCGCGGCAG GCGCGTACGA CGGACCCGTT GGCAGGAAGC
 6661 ACTTCCGGAA GCAACAGGCA GCGCTGACGC TCCGGCAGCA AGGGGCGGAA GAGCGGCTTG
 6721 CCGAACTTGA AGCCGCCGAA GCGCCGAAGC TTCCCTTGA CCAATGGTTC CCCGAAGACG
 6781 CCGACGCTGA CCCGACCGGC CCGAAGTCGT GGTGGGGGCG CGCGTCAGTA GACGACAAGC
 6841 GCGTGTTCGT CGGGCTCTTC GTAGACAAGA TCGTTGTAC GAAGTCGACT ACGGGCAGGG
 6901 GGCAGGGAAC GCGCATCGAG AAGCGCGCTT CGATCACGTG GGCGAAGCCG CCGACCGACG
 6961 ACGACGAAGA CGACGCCAG GACGGCACGG AAGACGTAGC GGCGTAGCTG CAGCTCGAGC
 7021 CATGCCCTGC TTTAATGAGA TATGCGAGC GCCTATGATC GCATGATATT TGCTTTCAAT
 7081 TCTGTTGTGC ACGTTGTAAA AAACCTGAGC ATGTGTAGCT CAGATCCTTA CCGCCGGTTT
 7141 CGGTTTATTC TAATGAATAT ATCACCCGTT ACTATCGTAT TTTTATGAAT AATATTCTCC
 7201 GTTCAATTTA CTGATTGTCC AAGCTTCTG CAGGAAGCTT TGGGCGGATC CTCTAGATTG
 7261 GACGGTATCG ATAAGCTCGC GGATCCCTGA AAGCGACGTT GGATGTAAAC ATCTACAAAT
 7321 TGCTTTTCT TATCGACCAT GTACGTAAGC GCTTACGTTT TTGGTGGACC CTTGAGGAAA
 7381 CTGGTAGCTG TTGTGGGCTT GTGGTCTCAA GATGGATCAT TAATTTCCAC CTTACCTAC
 7441 GATGGGGGGC ATCGCACCGG TGAGTAATAT TGTACGGCTA AGAGCGAATT TGGCCTGTAG
 7501 GATCCCTGAA AGCGACGTTG GATGTAAACA TCTACAAAT GCCTTTTCTT ATCGACCATG
 7561 TACGTAAGCG CTTACGTTTT TGGTGGACCC TTGAGGAAAC TGGTAGCTGT TGTGGGCTG
 7621 TGGTCTCAAG ATGGATCATT AATTTCCACC TTCACCTACG ATGGGGGGCA TCGCACCGGT
 7681 GAGTAATATT GTACGGCTAA GAGCGAATTT GGCCTGTAGG ATCCCTGAAA GCGACGTTGG
 7741 ATGTAAACAT CTACAAATTG CCTTTTCTTA TCGACCATGT ACGTAAGCGC TTACGTTTTT
 7801 GGTGGACCCT TGAGGAAACT GGTAGCTGTT GTGGGCTGT GGTCTCAAGA TGGATCATTA
 7861 ATTTCCACCT TCACCTACGA TGGGGGGCAT CGCACCGGTG AGTAATATTG TACGGCTAAG
 7921 AGCGAATTTG GCCTGTAGGA TCCGCGAGCT GGTCAATCCC ATTGCTTTTG AAGCAGCTCA
 7981 ACATTGACT TTTTCTCGAT CGAGGGAGAT TTTTCAAATC AGTGCGAAG ACGTGACGTA
 8041 AGTATCCGAG TCAGTTTTTA TTTTCTACT AATTGGTTCG TTTATTTCCG CGTGTAGGAC
 8101 ATGGCAACCG GGCCTGAATT TCGCGGGTAT TCTGTTTCTA TTCCAACCTT TTCTTGATCC
 8161 GCAGCCATTA ACGACTTTTG AATAGATACG CTGACACGCC AAGCCTCGCT AGTCAAAAGT
 8221 GTACCAAACA ACGCTTTACA GCAAGAACGG AATGCGCGTG ACGCTCGCGG TGACGCCATT
 8281 TCGCCTTTTC AGAAATGGAT AAATAGCTT GTTTCCTATT ATATCTTCCC AAATTACCAA
 8341 TACATTACAC TAGCATCTGA ATTCATAAC CAATCTCGAT ACACCAAATC GAAGATCCAA
 8401 GGAGATATAA CAATGAAGAC TAATCTTTTT CTCTTCTCA TCTTTTCACT TCTCCTATCA

FIGURE 8 CONTINUED

8461 TTATCCTCGG CCGAATTGTA CGTAAGTTTC TGCTTCTACC TTTGATATAT ATATAATAAT
 8521 TATCATTAAAT TAGTAGTAAT ATAATATTTT AAATATTTTT TTCAAAATAA AAGAATGTAG
 8581 TATATAGCAA TTGCTTTTCT GTAGTTTATA AGTGTGTATA TTTTAATTTA TAACTTTTCT
 8641 AATATATGAC CAAAATTTGT TGATGTGCAG GTACAATTCA GTAAAGGAGA AGAACTTTTC
 8701 ACTGGAGTTG TCCCAATTCT TGTGAATTA GATGGTGATG TTAATGGGCA CAAATTTTCT
 8761 GTCAGTGGAG AGGGTGAAGG TGATGCAACA TACGGAAAAC TTACCCTTAA ATTTATTTGC
 8821 ACTACTGGAA AACTACCTGT TCCATGGCCA ACATTGTCA CTACTTTCAC TTATGGTGTT
 8881 CAATGCTTTT CAAGATACCC AGATCATATG AAGCGGCACG ACTTCTTCAA GAGCGCCATG
 8941 CCTGAGGGAT ACGTGCAGGA GAGGACCATC TCTTTCAAGG ACGACGGGAA CTACAAGACA
 9001 CGTGCTGAAG TCAAGTTTGA GGGAGACACC CTCGTCAACA GGATCGAGCT TAAGGGAATC
 9061 GATTTCAAGG AGGACGGAAA CATCCTCGGC CACAAGTTGG AATACAATA CAACTCCAC
 9121 AACGTATACA TCACGGCAGA CAAACAAAAG AATGGAATCA AAGCTAACTT CAAAATTAGA
 9181 CACAACATTG AAGATGGAAG CGTTCAACTA GCAGACCATT ATCAACAAAA TACTCCAATT
 9241 GGCGATGGCC CTGTCCTTTT ACCAGACAAC CATTACCTGT CCACACAATC TGCCCTTTCT
 9301 AAAGATCCCA ACGAAAAGAG AGACCACATG GTCCTTCTTG AGTTTGTAAC AGCTGCTGGG
 9361 ATTACACATG GCATGGATGA ACTATACAAA CATGATGAGC TTTAAGAGCT CGAATTTCCC
 9421 CGATCGTTCA AACATTTGGC AATAAAGTTT CTTAAGATTG AATCCTGTTG CCGGTCTTGC
 9481 GATGATTATC ATATAATTTT TGTGAATTA CGTTAAGCAT GTAATAATTA ACATGTAATG
 9541 CATGACGTTA TTTATGAGAT GGGTTTTTAT GATTAGAGTC CCGCAATTAT ACATTTAATA
 9601 CGCGATAGAA AACAAAATAT AGCGCGCAA CTAGGATAAA TTATCGCGCG CGGTGTCATC
 9661 TATGTTACTA GATCGGGAAT TCGCGATCGC CCAACTGGG GTAACCTTTG AGTTCTCTCA
 9721 GTTGGGGGAG ATCTGATTGT CGTTTCCCGC CTTCAGTTTA AACTATCAGT GTTTGACAGG
 9781 ATATATTGGC GGGTAAACCT AAGAGAAAAG AGCGTTTATT AGAATAATCG GATATTTAAA
 9841 AGGGCGTGAA AAGGTTTATC CGTTCGTCCA TTTGTATGTC

FIGURE 9

Nucleotide sequence of *Arabidopsis thaliana* GA4H promoter region

1 TGAAATGAT AGGGATTGAA ACATCATCCT ATCGTTGACC AAAAATTTCA CTGCGTGCTA
61 TATAAAATAC TATATATGTT ACCCTTTAAC TGATGAAAAAT GTAAAGAGAC AAGGCAGCAC
121 CGTTTATCAT CAGACCAGTT TCGAGAGTGT TCCTGCATCG TTGGGCTCCC TCCTCAATTT
181 TGTCTACGTG ATTATATATC ATATCGTCTA CAAACAAAAT AAATACAATT CTATCATATG
241 AATATGTGAT CATCGATGAT CGATCAATAT ATGTTTTCGA GGTGACGTAT ATAGTATATT
301 TCCGTAGAGA CGGCGAAGAA CATGATATCT CTGCATGCCT CCAATCAAAT CTTTACACTT
361 CATCCTTCTT CGTTACTTGT TCAGTTGTTT CTTTCTAATC CCGACAACCC TTAATTTGTA
421 TTTCTATATT AGATCGAAAT ATCTCATTTG TGATAAATAA AATAAAAAAA ATCAAAGAAA
481 GCTATAGAGA AGCTGCGTGC ATGCATGGGT TGGCGATGTT TGGCTTGTTA TGTTTGGCTT
541 GTTATGTGGC ATTATCTGTA TGTATATTAC CCTAAATCAC ATCTACGACA TTTCCCTCGA
601 TCTTCAAAAT ATGCCAGCAA TCTTCATGTT TCCTCATATC TCTTAACATT GGAAATGTCT
661 TTTTGACCTC TTTTGATGTA TTTTAAATTA CTTCGAGCTC ATCTATATTA CAAATCATTC
721 ATGGTGAATT ATTGTCCAGC CAATAGAATA GAAATCTGAA TATAATGTGT ACCACATCTT
781 TTATGTAAAT TATACGATAT TCTTTTCTCT GAGAATGATC AAATAACAAC ATGCATGAAT
841 TGCTGCCAGA AAACGTCAGA TTGATCAGTT ATCACTACAA TTATCAATTA ATAGTAGAAT
901 AGTATCAAAA TGTACGTAGT GCCCATCTAT AGCTAGCTAA GGAGGACTCC GGATGTAGAG
961 AAAAGCTAAA ATGTGACTTG CTAGAGTTGT ATTATATTGA ATTTTCTAAA CTAATAGTAT
1021 CTTTTTTTACA GATAATAATT TCCGGAAGAA CTATTAGATG TATAGATATA ACAATAAGCA
1081 TCGATACCAA CCTTTTACTT CCAAAAAAAA ATAAAAAAA AATGCCAAGA TGAGATAATT
1141 TTGTCAATTT CAATTAGTGG GAAAAAACA ATTGTCTGTT TATTTTTGAA CCAACGCATC
1201 TCAGTGAATG ATTTCCCAGT TCTTAAGATT TTAGGACATA CTTTCCCAGT AACATCTAAT
1261 CCGTTTGGGC ATAAACAAGA CAATTTGTAG TTATGTACAT TTCTTAGTGA TGTGTGTTGA
1321 AAAGATATGA ATCAATGAGG TCCGACATAT TTTGTCAATA CGTTAGTGGT TTTTCAAAAT
1381 AAATTTTTAG TATATATATT AAAATAAGAC CAAAGGATAG GCTTTAGTGG TGTATTCAGG
1441 ATAGTTTTAA TAATCAATTC AAAATAAGTC GAAAGGATAT GTAAGATAGG CGTTATTTCA
1501 ACGTGGATCA TTATCAACCA TGTCAAAAAC GCATTTCAAC TCCTAGATGT GTTGTAGTTT
1561 ATATATGTTT CAAATGGAAT CGACCCAACA GAAAAAGAGA AAAAAACGTA AAAGGTTATG
1621 CGATTCCAGG GACGTCTCAT ATATATATAT ATTCGGATGA AATATAAATA TAATTATCGT
1681 GGTCTGTGAC AATAAATATG GAAATAGATG TGGAAATCAT GATCATGTGA AGAAGAAGAA
1741 GAACACGTGC AGATGAAGTC CAAATGATAA TAATGTGCAT GTCCATGAGT TATGTACTTA
1801 TGTGTATTAT CTACGTGTTT TCCATACATA CATATATAAA TCTTATATTA CTTTATGGTT
1861 TTGTCGTAAA AGTTACGTAG CATCAATAAT TGTGATTCGT TGCCATAAAC AGACAACACT
1921 TTGTAACGGT ATAAGGCTTG GCTCTCATGA TAAATGATA ACCCTTTTTT TCGTCGGAGA
1981 CAGACAAACG CATAAATCAC TAATTCTAAA CCGAGATGAT TGTCGATTGT TTTGCCATAT
2041 GCATAACTAG AATCTTCAGT TAATATTAAT TTTTGGTGTG TTCGATCGAA TAAAAAAA
2101 TAAACATTGC AATATTTCGA AATTTGTCGT CTTTCTTTTT ATAACACTAG CAAGTGAGAG
2161 GCTGAGAGCC AAGTGGAACG TTAAGAGACA ACATTAGATA TATATTATAT ATTGCTAAAT
2221 CTGTATTATT TCTTTTTAAC ATACGCAACT TTTGATTGGA AATCGTAAGT CGAAGGAAGG
2281 GCCTCGATTT ATGACGTACG CTTCGTGCCA AACAATTCCT CTTTAGTTGA GGCCGGGGAA
2341 GACGAGTTTG TTGTTAGTGA GCGATGCCAT GGCATCAATG AACCTCCAAA GGCCATATGT
2401 TCTGTAAAG GCTATTTTAG TTTTAAATTT TGTCTGATT AACTCAACCA CATGTTAAAT
2461 CAGATATCAT GTTTAACGAT ATTAGTTTTT AAACAAAATG ATTATCATAA AACGAAATTT
2521 ATGATGAAAC ATATATAATC TTTATCTTGT TTAAGTATGT AATCTTGTA TGTGTGATA
2581 CGCCTTGCAA ATCAAAAAAC TAGTTGCTGT TTTTGGCATT GTGTTTACGA AATATTTATT
2641 AATATTTTAA ATTAATTAAA TAAATGTTCT TATTTCTCAA CAGGAAACAA TATGTATTTT
2701 CTTTCTTTAT AAAATTACAA TGAATTATTT GTTTAAGCT GTCTATTTCC AAGAAACAAA
2761 ACACAAAAAT GATAAATTTA TAATAGTCAC ATAACCTGTC TTACAAAAAA AAAAAGAAAA
2821 GCGAAAAAGAA ATGTGACAAC AGAAAAATGGT TTTGATAACC AATAAGAATC GACAAAAAAA
2881 AAACCTACTC CACATATACT CTCTCTTCA CTCTTCAGTC TTCCTATTC AGTCTCGAGT
2941 ATTTACCGGA TCTATAAATA CACTCTCTT CTCCACCAAA AGTATCATAT CATACCAAAA
3001 ACATAAGGCC AAAATATAAA CACATAAGCC TTTTA